

AMENDMENTS TO THE CLAIMS:

Claims 1 to 17 (cancelled)

28. (new): The combination comprising:

- (a) a watercraft having a hull;
- (b) a watercraft drive including at least one drive shaft;
- (c) front and rear propellers, respectively mounted on said at least one drive shaft in coaxial longitudinally displaced relationship;
- (d) each of said propellers having at least two blades;
- (e) said front and rear propellers having equal diameters and being driven at like rotational velocities;
- (f) control means disposed between said front and rear propellers, for increasing the energy of a jet of water exiting the front propeller as said jet is transmitted to the rear propeller;
- (g) said control means acting on the water jet leaving the front propeller with both circular and axial flow components to reach the rear propeller substantially with axial flow components only;
- (h) said control means comprising, (i) a hollow shaft having an upper end connected to said hull and a lower end, (ii) a gondola-shaped underwater housing mounted on the lower end of said hollow shaft and containing said watercraft drive with said at least one drive shaft extending from opposite ends of said underwater housing, and (iii) a plurality of guide blades connected to at least one of said hollow shaft and gondola-shaped underwater housing;
- (i) an energy source mounted in said hull for transmitting energy through said hollow shaft to said watercraft drive for rotating said front and rear propellers;
- (j) the central portion of said rear propeller up to a diameter equal to the diameter of a water jet arriving at the rear propeller, which water jet, due to the action of the front propeller, has a contracted cross section, is designed to optimize the jet energy exiting the front propeller; and

(k) said rear propeller further having an annular area extending from said central portion to the outer circumference of the rear propeller, which is designed with the same design as that characterizing the front propeller, said annular area of the rear propeller interacting with surrounding ambient water.

29. (new): The combination in accordance with claim 28, wherein the pitch of the blades in the central portion of the rear propeller is 1.04 to 1.52 times the pitch of the blades in an equivalent central portion of the front propeller.

30. (new): The combination in accordance with claim 29, wherein the pitch of the blades in the annular area of the rear propeller is between 95 percent and 105 percent of the pitch of the blades of the front propeller.

31. (new): The combination in accordance with claim 28, wherein the pitches of the blades of each of the front and rear propellers is in the range of 0.9 to 1.6.

32. (new): The combination in accordance with claim 31, wherein the blades of the front and rear propellers have different degrees of arcing.

33. (new): The combination in accordance with claim 28, wherein said guide blades have an arc length ratio in the range of 0.0 to 0.2 and an angle of incidence in the range of -7 to +7.

34. (new): The combination in accordance with claim 28, wherein the control means includes two guide blades which are angularly symmetrically disposed about the common axis of rotation of the front and rear propellers.

35. (new): The combination in accordance with claim 28, wherein the watercraft drive further comprises a transmission, said at least one drive shaft extending from opposite ends thereof, and a connection shaft extending from said transmission through said hollow shaft into said hull for connection to a prime mover disposed therein.

36. (new): The combination in accordance with claim 28, wherein said watercraft drive includes an electric motor, and a plurality of electrical conductors extending from said motor through said hollow shaft into said hull for connection to a source of electrical power therein.

37. (new): The combination in accordance with claim 28, further comprising a hydraulic motor mounted in said watercraft operatively connected to hydraulic fluid lines extending through said hollow shaft into said hull for connection to a source of hydraulic power.

38. (new): The combination in accordance with claim 28, further comprising an accelerating nozzle jacketing the front propeller, said accelerating nozzle having a cross section which tapers from an inlet end upstream of the front propeller to a plane of rotation of the front propeller.

39. (new): The combination in accordance with claim 28, wherein each of said front and rear propellers is jacketed by a decelerating nozzle having a cross section which increases from a respective nozzle inlet to a plane of rotation of the respective propeller.

40. (new): The combination in accordance with claim 28, wherein the upper end of the hollow shaft is rotatably mounted on the hull for enabling rotation of the underwater housing relative to the hull.

41. (new): The combination in accordance with claim 40, wherein the hollow shaft is rotatable by 360 degrees about a longitudinal axis relative to the hull.

42. (new): The combination in accordance with claim 28 further comprising a front hub for fastening the front propeller to its respective drive shaft and a rear hub for fastening the rear propeller to its respective drive shaft, the front hub and the rear hub being contoured for enhancing flow from the front propeller to the rear propeller.

43. (new): The combination in accordance with claim 36, wherein the motor is a permanently excited synchronous electric motor.

44. (new): The combination in accordance with claim 43, further comprising a clutch connecting said at least one driving shaft to the motor rotor, said at least one driving shaft passing concentrically through the rotor and extending from both ends of the rotor for receiving the propellers which rotate in unison with said at least one driving shaft.

45. (new): The combination in accordance with claim 44, further comprising a bearing operatively mounted between said housing and said rotor for enabling relative rotation.

46. (new): The combination in accordance with claim 44, further comprising a rotor support tube for coupling said at least one drive shaft and the motor rotor.

47. (new): The combination in accordance with claim 40, wherein the axis of the hollow shaft intersects and is orthogonal to the axis of the at least one drive shaft, and further said combination comprises a carrier cone to which the upper end of the hollow shaft is connected, the housing being continuously pivotable by 360 degrees around the longitudinal axis of the hollow shaft.

48. (new): The combination in accordance with claim 47, wherein the hollow shaft and the carrier cone are mutually detachably connected in a plane of the hull.

49. (new): The combination in accordance with claim 47, wherein the carrier cone has a large end and a small end having a smaller cross section than that of said large end, the hollow shaft being connected to the small end of the carrier cone and the large end of the carrier cone being connected to the watercraft within the hull.

50. (new): The combination in accordance with claim 34, wherein the hollow shaft comprises one of said guide blades that are rotationally symmetrical disposed about the common axis of rotation of the front and rear propellers.

51. (new): The combination in accordance with claim 28, wherein the front propeller is jacketed by a decelerating nozzle having an inlet and a cross section which increases from the inlet to the plane of rotation of the propeller.

52. (new): The combination in accordance with claim 28, wherein each of the front and rear propellers is jacketed by one of an accelerating nozzle having an inlet and a cross section that decreases with distance from its inlet to the plane of rotation of its respective propeller, and a decelerating nozzle having an inlet and a cross section that increases from its inlet to the plane of rotation of its respective propeller.

53. (new): The combination in accordance with claim 36, wherein said electric motor has a rotor and a stator; a first support tube is in heat conducting relationship to said rotor; a second support tube having an inner surface and an outer surface is arranged with its inner surface in heat conducting relationship to said stator and its outer surface in heat conducting relationship to said underwater housing, whereby heat from said rotor and stator is conducted to ambient water surrounding said underwater housing for cooling said motor.